REMARKS

The Official Action dated June 30, 2004 has been carefully considered. Accordingly, the Declaration submitted herewith, taken with the following remarks, are believed sufficient to place the present application in condition for allowance. Reconsideration is respectfully requested.

Claims 1, 4-14, 19 and 63 remain pending and are under examination.

35 U.S.C. § 112, first paragraph

Claims 1, 4-14, 19 and 63 are rejected under 35 U.S.C. §112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Specifically, the Examiner asserts that claims 1, 4, 13, 14 and 63 encompass subject matter that is not defined in the specification. The Examiner maintains that the instant specification "only discloses cursory conclusions...without data to support the findings" and only provides "a limited discussion of the derivative, analog, homolog or fragment." The Examiner asserts that the description in the specification, specifically at page 12, is insufficient because the invention provides for a number of lipid oxidation inhibiting peptides of approximately 5-90 amino acids in length which substantially correspond in sequence to amino acid sequences found in specific portions of apo AIV, but does not provide "characteristics" nor "any evidence to demonstrate retention of function with regard to inhibitory activity in lipid oxidation."

With respect to claim 4, the Examiner asserts that the specification provides only a generic description of how to generate a "derivative, analog, homolog or fragment," and that "no specific guidance is provided on the generation of the derivative, analog, homolog or fragment that demonstrate the biological activity of the peptide sequence of SEQ ID NO: 5." The Examiner concludes that one of skill in the art would not recognize from the disclosure that the applicant was in possession of the apolipoprotein AIV which comprises derivative, analog, homolog or fragments which have substantially the same lipid oxidation properties as the apolipoprotein AIV wild-type molecule, and that there is no written description of either a

representative number of the variants or of a common structural feature of the apo AIV wild-type which encompasses all the variants."

This rejection is traversed with respect to present claims 1, 4-14, 19 and 63. Reconsideration is respectfully requested. More particularly, claim 1 recites a method for inhibiting lipid oxidation associated with a condition in a patient. The method comprises administering to a patient a composition comprising a pharmacologically effective amount of an apolipoprotein (apo) A-IV peptide or derivative, analog, homolog, or fragment thereof, to inhibit lipid oxidation. The apolipoprotein A-IV peptide is from 6 to 71 amino acids in length and the peptide or derivative, analog, homolog, or fragment thereof has substantially the same lipid oxidation properties as the apolipoprotein A-IV molecule.

Claim 13 recites a method of inhibiting the progression of atherosclerosis in a patient in need thereof. The method comprises administering to the patient a composition comprising an effective anti-oxidation amount of an apolipoprotein (apo) A-IV peptide or derivative, analog, homolog, or fragment thereof, to inhibit the progression of atherosclerosis. The apolipoprotein A-IV peptide is from 6 to 71 amino acids in length. The peptide or derivative, analog, homolog, or fragment thereof has substantially the same lipid oxidation properties as the apolipoprotein A-IV molecule.

Claim 14 is directed to a method of treating a patient for atherosclerosis. The method comprises administering to the patient a composition comprising an effective anti-oxidation amount of an apolipoprotein (apo) A-IV peptide or derivative, analog, homolog, or fragment thereof, to inhibit the progression of atherosclerosis. The apolipoprotein A-IV peptide is from 6 to 71 amino acids in length. The peptide or derivative, analog, homolog, or fragment thereof has substantially the same lipid oxidation properties as the apolipoprotein A-IV molecule.

With respect to the Examiner's assertion that no common structural feature has been disclosed, the Applicants draw the Examiner's attention to the instant specification at page 6, paragraph 2, which clearly teaches that the inventive peptides contemplated for use in the present methods comprise "at least a six amino acid sequence derived from the amino terminal portion of the mature apolipoprotein A-IV [molecule]." Moreover, the specification teaches that with respect to "larger peptides of between 15 and 90 amino acids, each contains

within its sequence the aforementioned repeat sequence." Id. The specification additionally teaches that the peptides may be linked to an additional sequence of amino acids from 1 to about 45 amino acids in length (see page 7, paragraph 1). Disclosure of requisite structural characteristics which further distinguish the inventive peptides is also provided by disclosure of embodiments which have a molecular conformations analogous to the molecular conformation of a surface region of the apolipoprotein (apo A-IV) moiety (see page 15, paragraph 4), which is readily identifiable to a person of ordinary skill in the art.

In addition, the specification provides a functional definition of the peptides employed by the present inventive methods with respect to a well-defined, readily and precisely ascertainable reference. According to both the specification and claims, the inventive peptides have substantially the same lipid oxidation properties as the apolipoprotein A-IV molecule. As the lipid oxidation properties of apo A-IV are known and disclosed, e.g. in present specification Example 1, determination of the presence, absence, or degree of exhibition of this property in any given peptide should be easily achievable by a person of ordinary skill in the art.

Moreover, the specification clearly defines the terms employed in the claims to define the invention (see, e.g., the definitions on page 12, lines 2-4 (peptide); page 6, lines 14-16 (homologue); page 6, lines 16-19 and pages 14-15, bridging paragraph (analogs); page 22, line 23--page 23, line 2 (derivative); and page 23, lines 16-18 (fragment). Not only do the inventors provide definitions, but most definitions are followed by a precise illustration. For example, on page 14 the inventors define "analogs" as substitutions or alterations in the amino acid sequences of the peptides of the invention (defined explicitly elsewhere) which do not abolish the appetite suppressant or feeding inhibition properties of the peptides. This definition is followed by "[t]hus, an analog might comprise a peptide having a substantially identical amino acid sequence to a peptide provided herein as SEQ ID NO: 1-13 and in which one or more amino acid residues have been conservatively substituted with chemically similar amino acids." This is followed by specific examples of "conservative substitutions," which is a phrase precisely defined in the specification on page 15, second paragraph as well. The phrase "substantially identical" is defined beginning at the bottom of page 21. In addition, guidance on designing analogs which maintain requisite biological activity is provided on page 22 in the first full paragraph. Applicants understand that page 12, as the

sole portion of the specification noted by the Examiner, may offer insufficient support, yet Applicants assert that the comprehensive disclosure throughout the specification of the term "analog" more than adequately supports the term in the claims and therefore satisfies the written description requirement.

With respect to the Examiner's assertion that there is no written description of a representative number of the variants, Applicants note that the present specification explicitly, by sequence identification, discloses numerous exemplary lipid oxidation suppressant peptide species derived from the native apolipoprotein A-IV, as well as homologues and analogs thereof (see pages 7, 8, and 15-21).

Applicants note that under Federal Circuit biotechnology-related written description precedence, a sufficient description of a genus may be achieved by means of disclosing a representative number of species, defined by nucleotide sequence, falling within the scope of the genus, or of a recitation of structural features common to the members of the genus, which features constitute a substantial portion of the genus. *Regents of the University of California v. Eli Lilly & Co.*, 119 F.3d 1559, 1569 43 USPQ2d 1398, 1406 (Fed. Cir. 1997). In addition to describing the genus by structural and functional homologies, the present inventors disclose and precisely describe 13 species, and offer guidance on how to select variants which retain the defining biological functioning. Applicants respectfully submit that the Examiner is applying an overly stringent, unprecedented requirement when he requests that the present inventors exhaustively produce all obvious variants and species of their invention in order to claim the structurally and functionally defined genus.

Applicants further respectfully submit that the Examiner applies an unprecedented and, in fact, previously rejected standard to assessing sufficiency of the written description requirement portion of the first paragraph of 35 U.S.C. §112. Applicants find nothing in patent law, case law or USPTO Examination guidelines indicating that "data" or experimental "proof" of assertions made in the specification is a requisite to an adequate written description. Rather, the appropriate standard is whether the applicant has conveyed with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention. *See, e.g., In re Kaslow*, 707 F.2d 1366, 1375 217 USPQ 1089 (Fed. Cir. 1983) ("The test for determining compliance with the written description

requirement is whether the disclosure of the application as originally filed reasonably conveys to the artisan that the inventor had possession at that time of the later claimed subject matter, *rather than the presence or absence of literal support in the specification for the claim language*") (italics added for emphasis).

With respect to the peptides employed by the present inventive methods, including homologues, analogs, fragments and derivatives thereof, the applicants have defined them structurally, functionally and by physical characteristics, and have provided representative species which exhibit the asserted function. According to the present specification, embodiments of the inventive peptides exhibit lipid oxidation characteristics substantially commensurate with apo A-IV which is a known reference, and, significantly, all the inventive peptides comprise specifically disclosed portions of the native apo A-IV molecule. In addition, every term employed in the present claims has been defined in the specification.

Finally, Applicants refer the Examiner to the USPTO Examination guide on Written Description, which may be found at http://www.uspto.gov/web/menu/written.pdf, wherein it states that there is a strong presumption that an adequate written description of the claimed invention is present in the specification as filed (see page 4). Applicants submit that the present claims which are drawn to methods which employ peptides which are defined by the presence of common structural features, common physical features, and common functional properties based on a fully characterized reference molecule, more than meet the requirements for satisfaction of the written description requirement. Applicants respectfully submit that the Examiner is overlooking explicit disclosure throughout the specification in finding that the polypeptides employed by the inventive methods are not fully defined by these commonalities. Hence, the Applicants submit that a person of ordinary skill in the art would readily appreciate that the Applicants were in full possession of the inventive methods as disclosed and claimed as of the filing date of the present application.

It is therefore submitted that present claims 1, 4-14, 19 and 63 are fully supported by the written description whereby the rejection under 35 U.S.C. §112, first paragraph, has been overcome. Reconsideration is respectfully requested.

35 U.S.C. § 102

Claims 1, 4-14 and 19 were rejected under 35 U.S.C. § 102(a) as being anticipated by Qin et al "Apolipoprotein A-IV: A potent endogenous inhibitor of lipid oxidation," FASEB Journal, vol. 12, N4, 1, S, page A341, Presentation No. 1980, [assertedly] March 17, 1998. Specifically the Examiner asserts that Qin et al. teach the role ApoA-IV as an endogenous inhibitor in protection against lipid oxidation and demonstrated anti-oxidative activity of apo A-IV. The Examiner further maintains that Qin et al.'s ApoA-IV is considered to be the apolipoprotein A-IV compound of claim 1 and dependent claims 4-14 and 19 of the instant application.

This rejection is traversed and reconsideration is respectfully requested. First, the Applicants note some ambiguity exists with respect to the publication date of this "reference," which actually appears to be an abstract of a presentation scheduled to take place at some point in the future. On the reference copy submitted by the Examiner, the date, "March 17, 1998" is handwritten across the top. This date, however, corresponds to a Tuesday (see Calendar for 1998, attached hereto), and the reference itself clearly denotes "Sunday PM" as the scheduled date of the abstracted presentation. As this reference assertedly predates the Applicants priority date by only two weeks, the date ambiguity is significant and Applicants do not accede to the Examiner's interpretation of this reference as constituting a reference published prior to Applicants' priority date. Nonetheless and irrespective of this ambiguity, Applicants assert that this reference does not constitute proper prior art under §102.

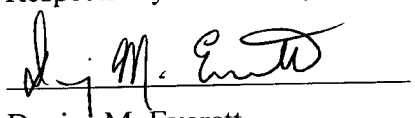
Applicants submit a Declaration under 37 C.F.R. 1.132 which establishes that the listed authors of the asserted Qin et al. reference are the present co-inventors, Tso and Hui, along with three graduate students. Paragraph three of the Declaration attests that both the reference Abstract, and the Presentation being promoted by the Abstract disclose the work of the present co-inventors and that the other listed authors, Qin, Swertfeger and Sheng, merely carried out work under the direction and supervision of the present co-inventors.

It is well-established patent law that one's own work is not prior art under § 102(a) even though it has been disclosed to the public in a manner or form which otherwise would fall under § 102(a). *In re Katz* 687 F.2d 450, 215 USPQ 14 (CCPA 1982). Under MPEP 2132.01 an Applicant may overcome a rejection based on a his own work "by submitting a

specific declaration establishing that the article is describing applicant's own work." Applicants submit that the Declaration under 1.132 attached hereto does establish that the Qin et al. reference cited against the present application constitutes the Applicants' "own work" and that the rejection of claims 1, 4-14 and 19 over Qin et al. has therefore been overcome. Reconsideration is respectfully requested.

It is believed that the above represents a complete response to the Examiner's rejection of the claims under 35 U.S.C. §§112, first paragraph, and §102(a) and places the present application in condition for allowance. Reconsideration and an early allowance are requested.

Respectfully submitted,



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